An examination of the skull somewhat modifies the definition of the genus as laid down in 'The Book of Antelopes' by Sclater and Thomas; for in this new species are found extra maxillo-premaxillary vacuities 9 mm. long and 3 mm. broad, very similar to those found in the genus *Nesotragus* of East Africa. The horns again of the members of this genus cannot be said to be "less than the diameter of the eye" in length; for the horns of the type of this new species, in their broken state, are longer than the diameter of the orbital cavity, and would undoubtedly measure half as much again in their perfect state. These horns are not "perfectly smooth," but show slight ridges or rings in their basal portion. The skull is otherwise fairly similar to that of the Royal Antelope.

There can be no doubt that Bates' Pigmy Antelope somewhat bridges over the differences between this genus and the East-African *Nesotragus*, and practically reduces the distinguishing characters to those of the horns alone.

The horns of *Neotragus* are very small, practically smooth, and laid back on the head in a plane with the forehead; while those of *Nesotragus* may be half as long as the head or more, strongly and closely ridged and directed upwards.

2. On the Land Operculate Mollusca collected during the "Skeat Expedition" to the Malay Peninsula in 1899–1900. By E. R. Sykes, F.Z.S.

[Received February 2, 1903.]

(Plate XX.[1])

The species of Land-Mollusks collected by the "Skeat Expedition," though not very numerous, are of considerable interest on account of the welcome addition made to a fauna which is as yet but little known. They include:—

Leptopoma aspirans Benson.

Leptopoma aspirans Benson, Ann. Nat. Hist. ser. 2, vol. xvii. p. 229.

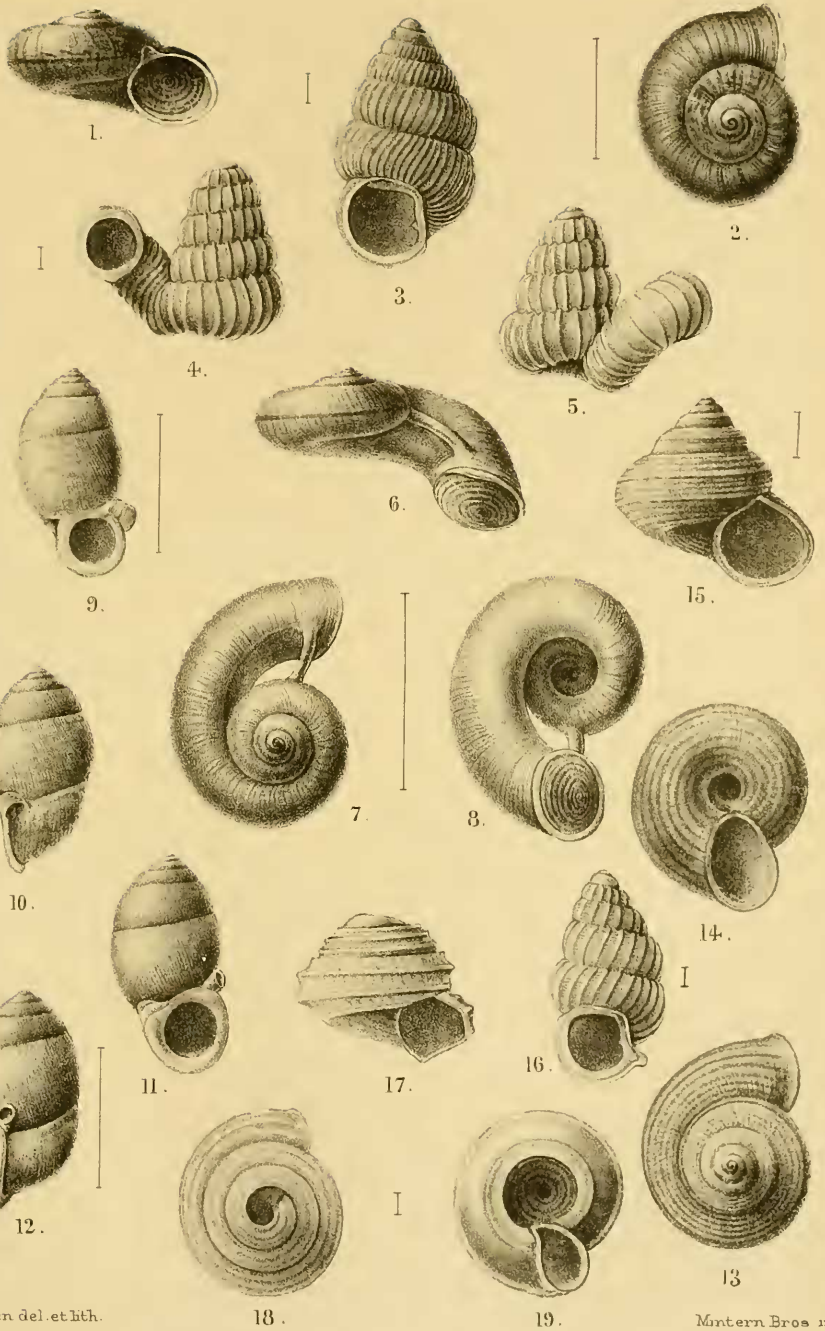
Hab. Biserat, Jalor. It has been recorded from Bukit Pondong and the Kinta Valley, having been originally described from Tenasserim.

Lagochilus kobelti, sp. nov. (Plate XX. figs. 13–15.)

Testa modice umbilicata, turbinata, solidula, lirulis numerosis cincta, periostraco brunneo leviter induta; spira conica; anfr. 5½, *convexi; apertura modice obliqua, subcircularis, peristomate duplici, incrassatulo et subreflexo, juxta insertionem breviter sed distincte inciso. Alt.* 6·8; *diam. max.* 7·0 *millim.*

Hab. Biserat, Jalor.

[1] For explanation of the Plate, see p. 199.



J. Green del. et lith.

Mintern Bros. imp.

MOLLUSCA FROM THE MALAY PENINSULA.

The species of *Lagochilus* recorded from the Malay region are very puzzling and I think Dr. Moellendorff was quite right in describing as *L. rollei* the form that I noted (under the name of *L. townsendi*) from Kelantan. The nearest ally of *L. kobelti* appears to be *L. townsendi* Crosse; I have not seen an authentic specimen of that species, but have compared the form now described with the description and figures given by Crosse and with a specimen collected by Herr Grubauer, from whose collections Dr. Moellendorff has recorded *L. townsendi* as the only species found. The shell I now name is a trifle smaller and more elevated in proportion to the breadth, and the umbilicus is narrower. It may be noted that the reference to Crosse's original paper in the 'Journal de Conchyliologie' should be to p. 200 and not p. 208 as given by De Morgan and Dr. Moellendorff in their papers on the Perak fauna.

I have named the form after Dr. Kobelt as a trifling recognition of his recent study of the Cyclophoridæ.

Ditropis cavernæ, sp. nov. (Plate XX. figs. 17–19.)

Testa depresso-conoidea, late umbilicata, olivacea, tenuis, glabra; spira mediocriter elevata, apice eroso, sutura impressa; anfr. 4 (?), *convexi, ultimus antice vix descendens, carinatus, carinis duabus supra peripheriam, unica ad peripheriam, et plurimis in regione umbilicali; apertura subovalis, peristomate incrassatulo. Alt.* 2·2; *diam. max.* 1·7 *millim.*

Hab. In a cave, Biserat, Jalor.

A single specimen only.

Cyclophorus malayanus (Benson).

Cyclostoma malayanum Benson, Ann. Nat. Hist. ser. 2, vol. x. p. 269.

Hab. Gunong Inas, Perak.

Recently when cataloguing (J. Malac. ix. p. 61) a collection of shells from Kelantan, I gave the names of *Cyclophorus saturnus* Pfr. and *borneensis* Metc.: both the forms then recorded have occurred in the present collection, and I have therefore again considered the identifications. Both, according to my present view, are erroneous, and the group is a very difficult one. The present species, which I regard as a form of *C. malayanus*, was then named *C. saturnus*, and the next species was called *C. borneensis*.

Cyclophorus tuba (Sby.).

Cyclostoma tuba Sowerby, Proc. Zool. Soc. 1842, p. 83.

Hab. Gunong Inas, Perak.

See remarks under the last species; probably the *C. borneensis*, recorded by De Morgan from Perak, also belongs to this species.

Pterocyclos subalatus, sp. nov. (Plate XX. figs. 1, 2.)

Testa late umbilicata, orbiculato-depressa, lineis incrementi notata,

brunnea, strigis corneis picta, fascia unica nigro-brunnea ad peripheriam ornata; anfr. 4½, *mediocriter crescentes, convexi, sutura bene notata separati; apertura subcircularis, peristomate indistincte duplicato, ala parva antice angulato. Alt.* 8; *diam. max.* 16 *millim.*

Hab. Gunong Inas, at 5000 feet.

I thought at first that this might be a form of *P. blandi* Bens., but it appears to be smaller, more elevate and not so widely umbilicated, and to differ in colour. In the two specimens that I have seen the lip is duplicated only on its outer margin, and the wing is small and thin.

Rhiostoma jalorensis, sp. nov. (Plate XX. figs. 6–8.)

Nearly related to *R. housei* but larger, slightly more depressed, and with the whorls not so tightly coiled. The tube is long and large, reaching the body of the shell, and is bent slightly backwards at the junction. The disjoined portion of the last whorl is much longer than is the case in *R. housei*, as will be seen from the figure, and is more descending. The colour resembles that of *R. housei*, and a dark band is usually present at the periphery. Operculum as usual. Diam. max. 29 millim.

Hab. Limestone Hills and Caves, Biserat, Jalor.

I have been in some doubt as to whether this is not a local race of *R. housei*, but the differences are constant in the specimens examined and, I think, are of specific value. The porcellaneous appearance of the operculum, so often seen in this group, appears to be due to the wearing down of the outer layers.

Rhiostoma, sp.

Hab. Kwala Aring, Kelantan.

A single specimen which agrees well with *R. jousseaumei* De Morgan, save that the tube is placed a little further back from the mouth, and is thinner and more cylindrical. It appears safer, however, to await further material ere describing this form.

Opisthoporus penangensis Stol.

Opisthoporus penangensis Stoliczka, J. As. Soc. Bengal, vol. xlii. pt. 2, p. 265, pl. x. fig. 7.

Hab. Kwala Aring, Kelantan.

A single specimen, which I refer to this species with some doubt.

Rhaphaulus ascendens, sp. nov. (Plate XX. figs. 11, 12.)

Testa pupoidea, anguste umbilicata, fusco-purpurea, dense costulato-striata, spira bene elevata, apice obtusulo; anfr. 6, *plano-convexi, penultimus gibbosus; apertura subcircularis, intus pallide fusca; peristoma pallide corneum, expansum et reflexum, marginibus callo junctis; tubulus brevis, incrassatus, a sutura oblique ascendens. Alt.* 18·5; *diam. max.* 9·5 *millim.*

Hab. Patalung.

A single specimen "from rotten wood." Recalling in shape *R. perakensis* Smith, the present species is larger and stouter, and the tube slants obliquely upwards instead of descending; as compared with *R. lorraini* Pfr., which also has an ascending tube, the form is not so cylindrical, the whorls are flatter, and the size is much greater.

Rhaphaulus perakensis Smith, var. jalorensis, n. var. (Plate XX. figs. 9, 10.)

Shell very similar to *R. perakensis* Smith, but a little thinner and paler in colour, and the tube is bent along the outer lip, being attached to the lip, and not diverted behind it as in typical *R. perakensis*. The tube is broad and short. This form may prove to be a distinct species, but bearing in mind the great variation shown by Col. Godwin-Austen (Moll. India, vol. i. p. 202, pl. xlvii.) to exist in *R. blanfordi* Benson, and also considering how little we know of the group, most forms having been described from very few specimens, I have thought it wiser to give only a varietal name.

Hab. Bukit Bisar, on the borders of Jalor, altitude 2000 feet.

A single specimen.

Schistoloma anostoma (Benson).

Cyclostoma anostoma Benson, Ann. Nat. Hist. ser. 6, vol. x. p. 269.

Hab. Belimbing, Ligeh.

Schistoloma sectilabrum (Gould).

Cyclostoma sectilabrum Gould, Boston Journ. Nat. Hist. vol. iv. p. 459, pl. xxiv. fig. 10.

Hab. Ulu Selama, Perak.

Pupina lowi De Morgan.

Pupina lowi De Morgan, Bull. Soc. Zool. France, vol. x. 1885, p. 414, pl. vii. fig. 3 (*louri* on plate).

Hab. Gunong Inas, Perak.

Pupina aureola Stoliczka.

Pupina aureola Stoliczka, J. As. Soc. Bengal, vol. xli. pt. 2, p. 267, pl. x. figs. 11, 12.

Hab. Jalor, a single specimen.

Agrees well with Stoliczka's figure 12, but his figure 11 looks as if it might belong to a different species.

Alycæus thieroti De Morgan.

Alycæus thieroti De Morgan, Bull. Soc. Zool. France, vol. x. 1885, p. 403, pl. viii. fig. 6; Moellendorff, Proc. Zool. Soc. 1891, p. 342.

Hab. Belimbing, Ligeh, a single specimen.

ALYCÆUS DIPLOCHILUS Moellendorff.

Alycæus diplochilus Moellendorff, J. As. Soc. Bengal, vol. lv. pt. 2, 1886, p. 313; Proc. Zool. Soc. 1891, p. 342, pl. xxx. fig. 8.

Hab. Cave near Biserat, Jalor.

ALYCÆUS CONFORMIS Fulton.

Alycæus conformis Fulton, Ann. Nat. Hist. ser. 7, vol. ix. 1902, p. 68.

Hab. Kwala Aring, Kelantan.

ALYCÆUS PERAKENSIS Crosse.

Alycæus perakensis Crosse, J. Conchyl. vol. xxvii. 1879, p. 206, pl. xii. fig. 7.

Hab. Biserat, Jalor, amongst rocks.

OPISTHOSTOMA ANNANDALEI, sp. nov. (Plate XX. figs. 4, 5.)

Testa conico-pyramidalis, perforata, pallide rufescens, spira bene elevata, apice obtuso; anfr. 7, *convexi, primi læves, reliqui distante lamellati, ultimus constrictus, retroversus, ascendens, conspicue solutus; apertura rotundata, peristomate leviter incrassato. Alt.* 2·2; *diam. max.* 2·8; *diam. min.* 1·6 *millim.*

Hab. Jalor.

A single specimen, found by Mr. Annandale in débris on the floor of a cave. Related to *O. laidlawi* Sykes, from Kelantan, but the present species is larger, and the spire is much more produced, thus becoming more cylindrical in appearance.

DIPLOMMATINA SKEATI, sp. nov. (Plate XX. fig. 3.)

Testa sinistrorsa, vix rimata, ovato-fusiformis, aurantio-rufa, solidiuscula; anfr. 6½, *convexi, primi læves, reliqui costulis parvis subremotis regulariter sculpti; sutura bene impressa; apertura fere circularis, peristomate incrassatulo, bene reflexo, subalato; lamella columellaris parva. Alt.* 3·1; *diam. max.* 1·9 *millim.*

Hab. Gunong Inas, Perak, at about 5000 feet.

Only a single specimen of the shell, the most salient features of which are the inflated whorls, deeply cut suture, and fine, regular costulations.

DIPLOMMATINA LAIDLAWI, sp. nov. (Plate XX. fig. 16.)

Testa sinistrorsa, rimata, ovato-fusiformis, corneo-albida, apice rubello; anfr. 5½, *convexi, primi læves, reliqui costulis parvis remotis regulariter sculpti, interstitiis sub lente dense spiraliter striatis; apertura quadrato-circularis, peristomate duplici, expanso, margine columellari sinuato, subalato; lamella columellaris minima, indistincta. Alt.* 2; *diam. max.* 1 *millim.*

Hab. Gunong Inas, 3000–4500 feet, Perak.

Found "on the under surface of dead leaves, young with adults."

Much smaller than the last species, the costulæ more distant, and densely marked with minute spirals. I can find no trace of these latter in *D. skeati*, but the single specimen was not taken alive.

GEORISSA MONTEROSATIANA Godwin-Austen & Nevill.

Georissa monterosatiana Godwin-Austen & Nevill, P. Zool. Soc. 1879, p. 729, pl. lix. fig. 6.

Hab. Perak.

EXPLANATION OF PLATE XX.

Figs. 1, 2. *Pterocyclos subalatus*, p. 195.
3. *Diplommatina skeati*, p. 198.
4, 5. *Opisthostoma annandalei*, p. 198.
6, 7, 8. *Rhiostoma jalorensis*, p. 196.
9, 10. *Rhaphaulus perakensis*, var. *jalorensis*, p. 197
11, 12. *Rhaphaulus ascendens*, p. 196.
13, 14, 15. *Lagochilus kobelti*, p. 194.
16. *Diplommatina laidlawi*, p. 198.
17, 18, 19. *Ditropis cavernæ*, p. 195.

3. The Significance of the Callosities on the Limbs of the *Equidæ*. By R. LYDEKKER, F.Z.S.

[Received February 5, 1903.]

The question as to what structures in other mammals are represented by the callosities on the inner sides of all the limbs of the Horse, and those of the hind-limbs of the Kiang, Ass, and Zebras, is one which has attracted the attention of many naturalists, nearly all of whom appear to be in accord in regarding them as vestigial structures. The late Sir W. H. Flower, for instance, in his work 'The Horse' expressed the opinion that these structures are degenerate glands; pointing out at the same time that the so-called ergot on the hinder aspect of the horse's pastern appears to represent one of the pads, or cushions, which are still functional in the foot of the Tapir.

In his volume on "Mammalia" in the 'Cambridge Natural History'[1], of which the preface is dated February 1902, Mr. Beddard gives a qualified support to this gland-theory; stating in one passage that the equine front callosities probably correspond to the carpal glands of several other mammals, although on another page their glandular nature is questioned. In an apparently later communication[2] the same gentleman suggests that the callosities on the fore-limbs of the *Equidæ* may represent a carpal sense-organ, vestiges of which he believes to survive in the carpal bristles of the Dassies. The degeneration of such an organ would, it is urged, very likely result in the formation of structures resembling those under consideration.

[1] Pp. 12, 13, and 240.

[2] Proc. Zool. Soc. 1902, i. p. 135.—I am indebted to Mr. Beddard himself for directing my attention to this passage.